

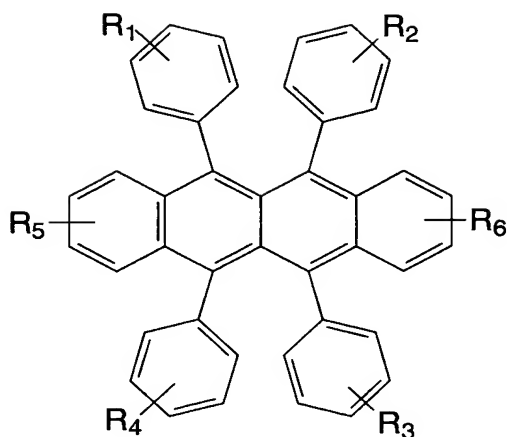
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

The text of all pending claims (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (canceled), (withdrawn), (new), (previously presented), or (not entered).

Listing of Claims:

1. (previously presented) A white light-emitting OLED device, comprising:
 - a) an anode and a cathode spaced apart from one another;
 - b) a hole-transporting layer disposed over the anode;
 - c) a first light-emitting layer disposed on the hole-transporting layer including an electron-transporting material host and a yellow light-emitting dopant for producing yellow light;
 - d) a second light-emitting layer disposed on the first light-emitting layer and including a blue host and a blue dopant for producing blue light; and
 - e) an electron-transporting layer disposed between the cathode and the second light-emitting layer.
2. (original) The white light-emitting OLED device of claim 1 wherein the first light-emitting layer host includes Alq, Gaq, Inq, or Mgq.
3. (original) The white light-emitting OLED device of claim 1 wherein the blue host includes ADN or TBADN.
4. (original) The white light-emitting OLED device of claim 1 wherein the yellow light-emitting dopant includes



wherein R_1 , R_2 , R_3 , R_4 , R_5 , R_6 represent one or more substituents on each ring where each substituent is individually selected from the following groups:

Group 1: hydrogen, or alkyl of from 1 to 24 carbon atoms;

Group 2: aryl or substituted aryl of from 5 to 20 carbon atoms;

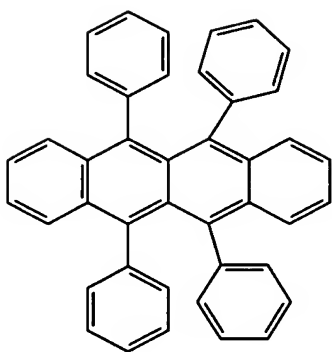
Group 3: carbon atoms from 4 to 24 necessary to complete a fused aromatic ring of phenyl, naphthyl, anthracenyl, phenanthryl, pyrenyl, or perylenyl;

Group 4: heteroaryl or substituted heteroaryl of from 5 to 24 carbon atoms such as thiazolyl, furyl, thienyl, pyridyl, quinolinyl or other heterocyclic systems, which may be bonded via a single bond, or may complete a fused heteroaromatic ring system;

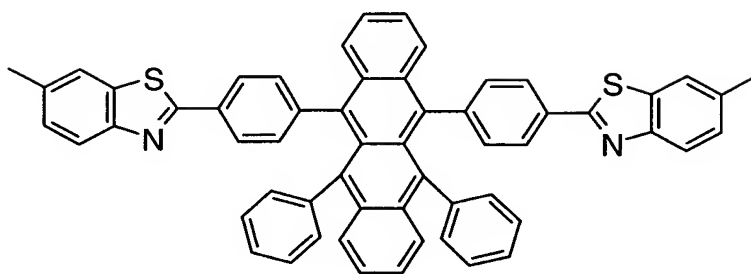
Group 5: alkoxyamino, alkylamino, or arylamino of from 1 to 24 carbon atoms; or

Group 6: fluorine, chlorine, bromine or cyano.

5. (original) The white light-emitting OLED device of claim 4 wherein the yellow light-emitting dopant includes 5,6,11,12-tetraphenyl-naphthalene (rubrene); 6,11-diphenyl-5,12-bis(4-(6-methyl-benzothiazol-2-yl)phenyl)naphthalene (DBzR) or 5,6,11,12-tetra(2-naphthyl)naphthalene (NR), with the following formulas:

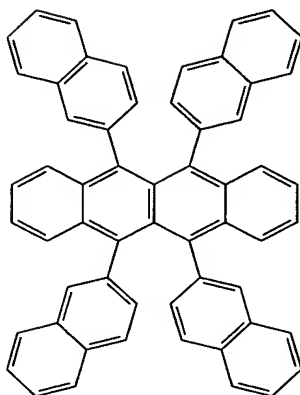


(rubrene);



(DBzR);

or



(NR).

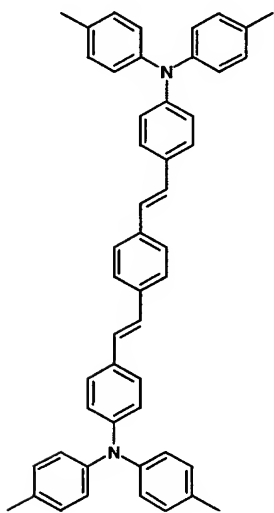
6. (original) The white light-emitting OLED device of claim 5 wherein the concentration of yellow light-emitting dopant 5,6,11,12-tetraphenylnaphthacene (rubrene); 6,11-diphenyl-5,12-bis(4-(6-methylbenzothiazol-2-yl)phenyl)naphthacene (DBzR) or 5,6,11,12-tetra(2-naphthyl)naphthacene (NR) is in a range of from greater than 0 and less than 30% by volume of the electron-transporting material host.

7. (original) The white light-emitting OLED device of claim 5 wherein the concentration of yellow light-emitting dopant 5,6,11,12-tetraphenyl-naphthacene (rubrene); 6,11-diphenyl-5,12-bis(4-(6-methyl-benzothiazol-2-yl)phenyl)naphthacene (DBzR) or 5,6,11,12-tetra(2-naphthyl)naphthacene (NR) is preferably in a range of from greater than 0 and less than 5% by volume of the electron-transporting material host.

8. (original) The white light-emitting OLED device of claim 1 wherein the thickness of the first light-emitting layer is between 5 nm to 100 nm.

9. (original) The white light-emitting OLED device of claim 1 wherein the thickness of the second light-emitting layer is between 5 nm to 100 nm.

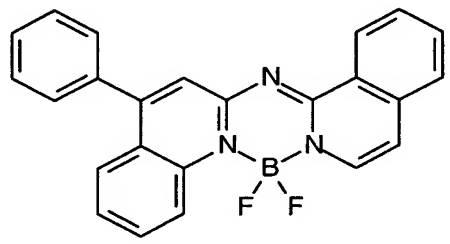
10. (original) The white light-emitting OLED device of claim 1 wherein the blue dopant includes distyrylamine derivatives as shown by the formula



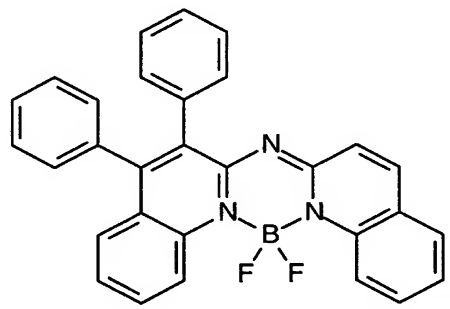
11. (original) The white light-emitting OLED device of claim 1 wherein the blue-emitting dopant includes perylene and its derivatives.

12. (previously presented) The white light-emitting OLED device of claim 1 wherein the blue dopant is represented by the following formulas:

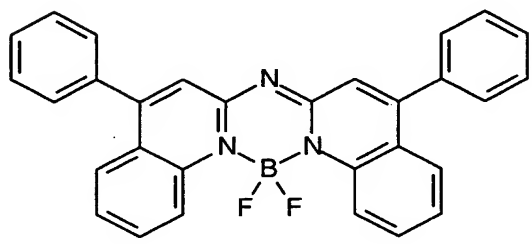
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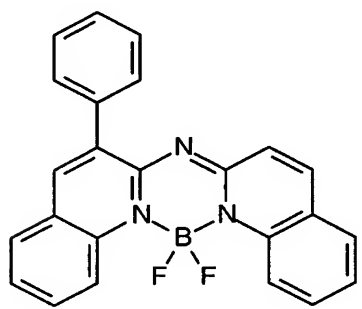
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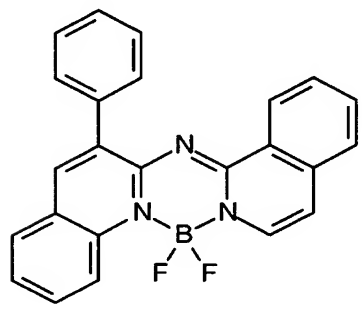
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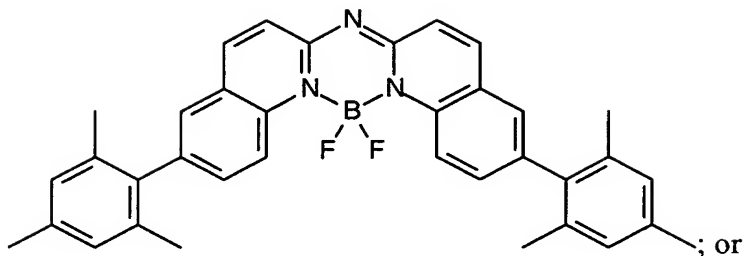
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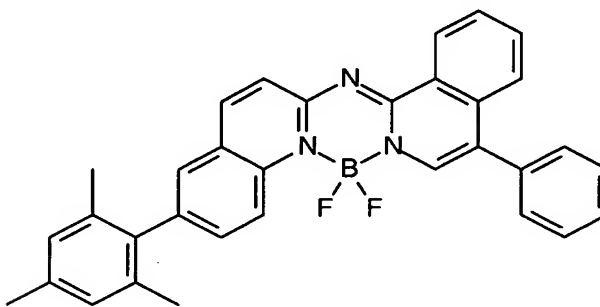
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13. (previously presented) The white light-emitting OLED device of claim 12 wherein the concentration of blue-emitting dopants is in the range of greater than 0 and less than 10% by volume of the blue host.

14. (original) The white light-emitting OLED device of claim 12 wherein thickness of the hole-transporting layer is between 10 nm-300 nm.

15. (previously presented) A white light-emitting OLED device, comprising:

- a) an anode and a cathode spaced apart from one another;
- b) a hole-transporting layer disposed over the anode;
- c) a first light-emitting layer disposed on the hole-transporting layer including a first electron-transporting material host and a first yellow light-emitting dopant for producing yellow light;
- d) a second light-emitting layer disposed on the first light-emitting layer and including a blue host and a blue dopant for producing blue light; and
- e) at least one electron-transporting layer adjacent to the second light-emitting layer, and disposed between the second light-emitting layer

and the cathode, comprising a second electron-transporting material host and a second yellow light-emitting dopant.

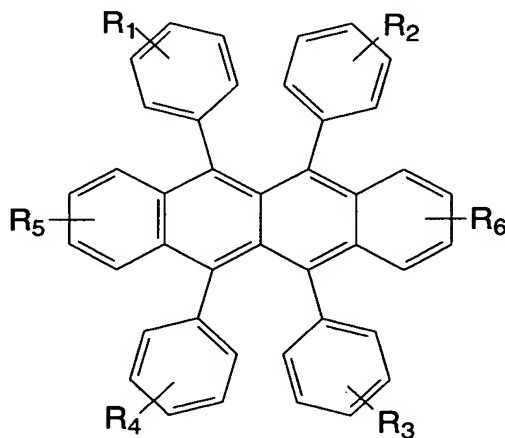
16. (currently amended) The white light-emitting OLED device of claim 15 wherein the first electron-transporting material host and the second electron-transporting material ~~host are~~ host are the same or different.

17. (canceled)

18. (original) The white light-emitting OLED device of claim 15 wherein the first electron-transporting material host and the second electron-transporting material host includes Alq, Gaq, Inq, or Mgq.

19. (original) The white light-emitting OLED device of claim 15 wherein the blue host in the second light-emitting layer includes ADN or TBADN.

20. (original) The white light-emitting OLED device of claim 15 wherein the first or second yellow dopants include



wherein R₁, R₂, R₃, R₄, R₅, R₆ represent one or more substituents on each ring where each substituent is individually selected from the following groups:

Group 1: hydrogen, or alkyl of from 1 to 24 carbon atoms;

Group 2: aryl or substituted aryl of from 5 to 20 carbon atoms;

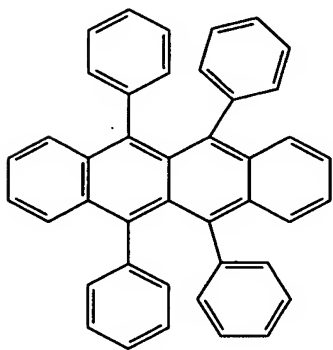
Group 3: carbon atoms from 4 to 24 necessary to complete a fused aromatic ring of phenyl, naphthyl, anthracenyl, phenanthryl, pyrenyl, or perylenyl;

Group 4: heteroaryl or substituted heteroaryl of from 5 to 24 carbon atoms such as thiazolyl, furyl, thienyl, pyridyl, quinolinyl or other heterocyclic systems, which may be bonded via a single bond, or may complete a fused heteroaromatic ring system;

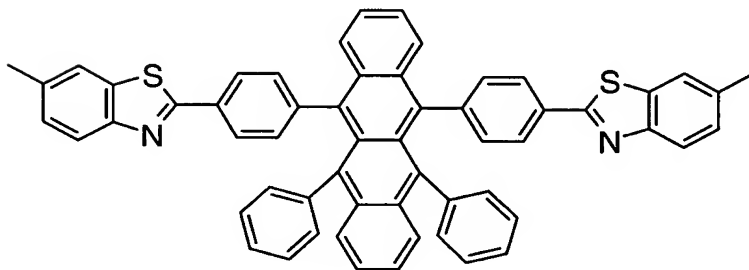
Group 5: alkoxyamino, alkylamino, or arylamino of from 1 to 24 carbon atoms; or

Group 6: fluorine, chlorine, bromine or cyano.

21. (original) The white light-emitting OLED device of claim 15 wherein the first and second yellow-emitting dopants includes 5,6,11,12-tetraphenylnaphthacene (rubrene); 6,11-diphenyl-5,12-bis(4-(6-methylbenzothiazol-2-yl)phenyl)naphthacene (DBzR) or 5,6,11,12-tetra(2-naphthyl)naphthacene (NR), with the following formulas:

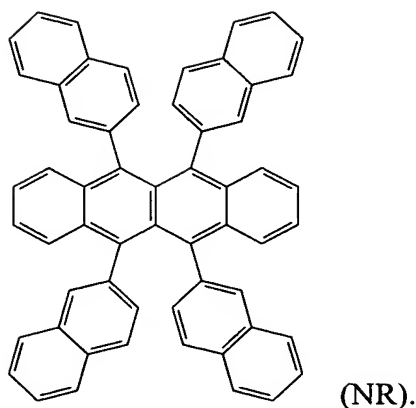


(rubrene);



(DBzR);

or



22. (original) The white light-emitting OLED device of claim 15 wherein the concentration of the first and the second yellow-emitting dopants 5,6,11,12-tetraphenyl-naphthacene (rubrene); 6,11-diphenyl-5,12-bis(4-(6-methyl-benzothiazol-2-yl)phenyl)naphthacene (DBzR) or 5,6,11,12-tetra(2-naphthyl)naphthacene (NR) is in a range of from greater than 0 and less than 30% by volume of the their corresponding host.

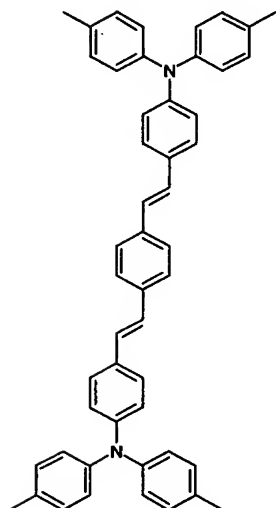
23. (original) The white light-emitting OLED device of claim 15 wherein the concentration of yellow-emitting dopants 5,6,11,12-tetraphenyl-naphthacene (rubrene); 6,11-diphenyl-5,12-bis(4-(6-methyl-benzothiazol-2-yl)phenyl)naphthacene (DBzR) or 5,6,11,12-tetra(2-naphthyl)naphthacene (NR) is preferably in a range of from greater than 0 and less than 5% by volume of their corresponding host.

24. (original) The white light-emitting OLED device of claim 15 wherein the thickness of the first emission layer is between 5 nm to 100 nm.

25. (original) The white light-emitting OLED device of claim 15 wherein the thickness of the second emission layer is between 5 nm to 100 nm.

26. (canceled)

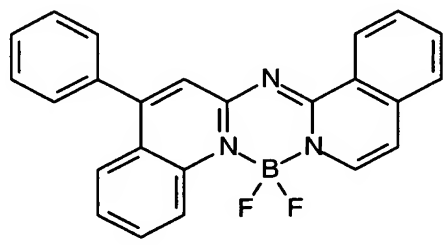
27. (original) The white light-emitting OLED device of claim 15 wherein the blue dopant includes distyrylamine derivatives includes



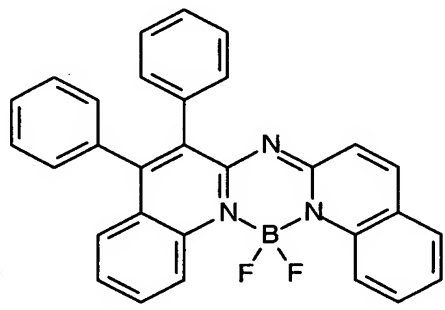
28. (original) The white light-emitting OLED device of claim 15 wherein the blue-emitting dopant includes perylene and its derivatives.

29. (previously presented) The white light-emitting OLED device of claim 15 wherein the blue dopant is represented by the following formulas:

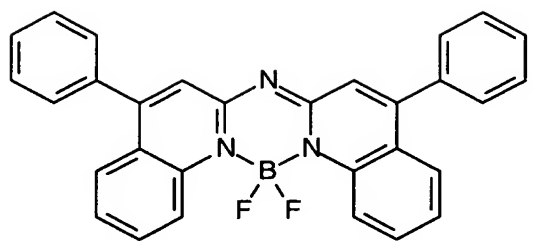
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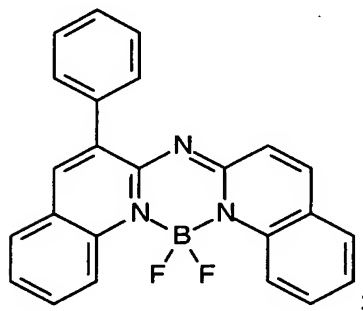


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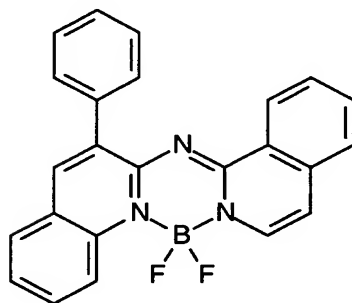
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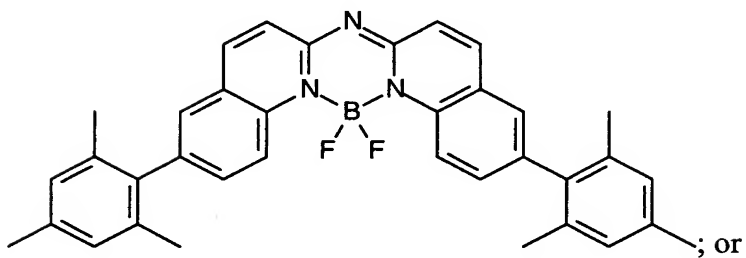
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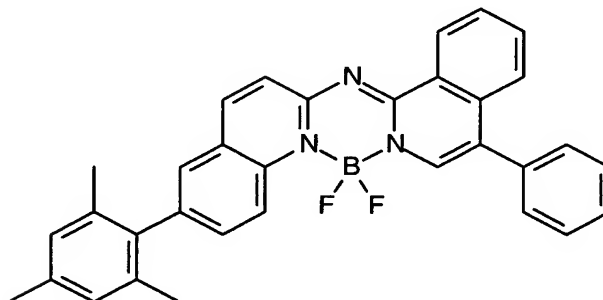
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; or

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30. (previously presented) The white light-emitting OLED device of claim 15 wherein the concentration of blue-emitting dopants is in the range of greater than 0 and less than 10% by volume of the blue host material.

31. (original) The white light-emitting OLED device of claim 15 wherein thickness of the hole-transporting layer is between 10-300 nm.

32. (currently amended) A white light-emitting OLED device, comprising:

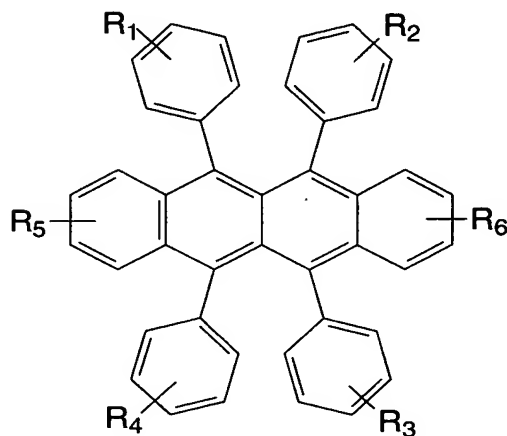
- a) an anode and a cathode spaced apart from one another;
- b) a first hole-transporting layer disposed over the anode;
- c) a second hole-transporting layer disposed over the first hole-transporting layer and including a hole-transporting material host and a first ~~third~~ yellow light-emitting dopant;
- d) a first light-emitting layer disposed on the second hole-transporting layer including a first electron-transporting material host and a second ~~third~~ yellow light-emitting dopant for producing yellow light;
- e) a second light-emitting layer disposed on the first light-emitting layer including a blue host and a blue dopant for producing blue light; and
- f) an electron-transporting layer disposed between the cathode and the second light-emitting layer.

33. (currently amended) The white light-emitting OLED device of claim 32 wherein the first and second ~~third~~ yellow dopants are the same or different.

34. (original) The white light-emitting OLED device of claim 32 wherein the first electron-transporting material host includes Alq, Gaq, Inq, or Mgq.

35. (original) The white light-emitting OLED device of claim 32 wherein the blue host in the second emission layer includes ADN or TBADN.

36. (original) The white light-emitting OLED device of claim 32 wherein the first or third yellow dopants include



wherein R₁, R₂, R₃, R₄, R₅, R₆ represent one or more substituents on each ring where each substituent is individually selected from the following groups:

Group 1: hydrogen, or alkyl of from 1 to 24 carbon atoms;

Group 2: aryl or substituted aryl of from 5 to 20 carbon atoms;

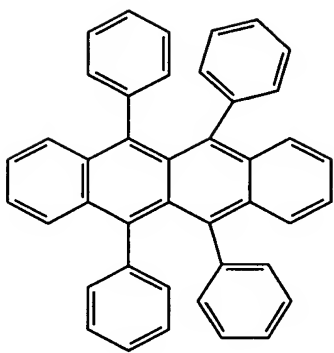
Group 3: carbon atoms from 4 to 24 necessary to complete a fused aromatic ring of phenyl, naphthyl, anthracenyl, phenanthryl, pyrenyl, or perylenyl;

Group 4: heteroaryl or substituted heteroaryl of from 5 to 24 carbon atoms such as thiazolyl, furyl, thienyl, pyridyl, quinolinyl or other heterocyclic systems, which may be bonded via a single bond, or may complete a fused heteroaromatic ring system;

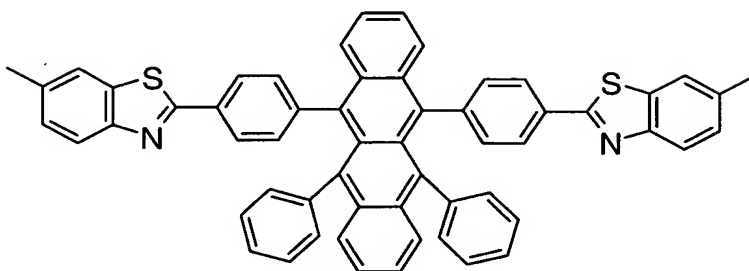
Group 5: alkoxyamino, alkylamino, or arylamino of from 1 to 24 carbon atoms; or

Group 6: fluorine, chlorine, bromine or cyano.

37. (currently amended) The white light-emitting OLED device of claim 32 wherein the first and second ~~third~~ yellow light-emitting dopants includes 5,6,11,12-tetraphenyl-naphthacene (rubrene); 6,11-diphenyl-5,12-bis(4-(6-methyl-benzothiazol-2-yl)phenyl)naphthacene (DBzR) or 5,6,11,12-tetra(2-naphthyl)naphthacene (NR), with the following formulas:

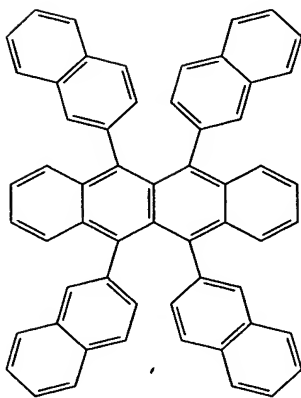


(rubrene);



(DBzR);

or



(NR).

38. (currently amended) The white light-emitting OLED device of claim 32 wherein the concentration of the first and the second ~~third~~ yellow light-emitting dopants 5,6,11,12-tetraphenylnaphthacene (rubrene); 6,11-diphenyl-5,12-bis(4-(6-methyl-benzothiazol-2-yl)phenyl)naphthacene (DBzR) or 5,6,11,12-tetra(2-naphthyl)naphthacene (NR) is in a range of from greater than 0 and less than 30% by volume of the their corresponding host.

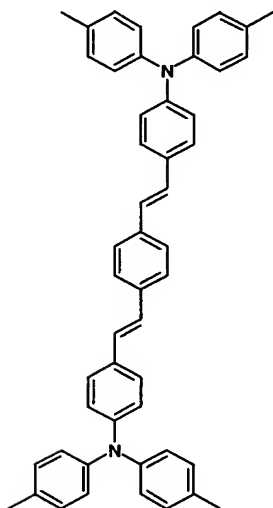
39. (original) The white light-emitting OLED device of claim 32 wherein the concentration of yellow light-emitting dopants 5,6,11,12-tetraphenyl-naphthacene (rubrene); 6,11-diphenyl-5,12-bis(4-(6-methyl-benzothiazol-2-yl)phenyl)naphthacene (DBzR) or 5,6,11,12-tetra(2-naphthyl)naphthacene (NR) is preferably in a range of from greater than 0 and less than 5% by volume of their corresponding host.

40. (original) The white light-emitting OLED device of claim 32 wherein the thickness of the first light-emitting layer is between 5 nm to 100 nm.

41. (original) The white light-emitting OLED device of claim 32 wherein the thickness of the second light-emitting layer is between 5-100 nm.

42. (original) The white light-emitting OLED device of claim 32 wherein the thickness of the electron-transporting layer is between 5-100 nm.

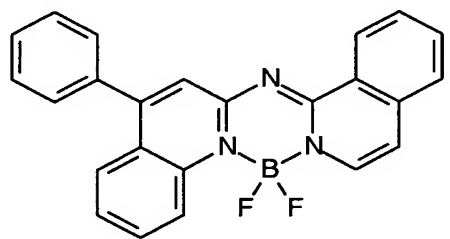
43. (original) The white light-emitting OLED device of claim 32 wherein the blue dopant includes distyrylamine derivatives includes



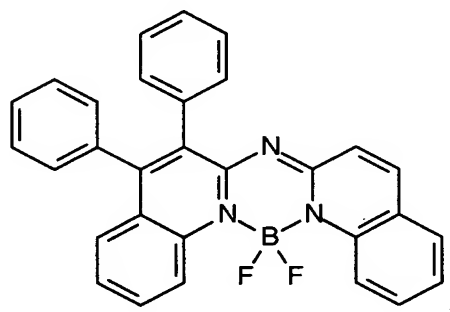
44. (original) The white light-emitting OLED device of claim 32 wherein the blue-emitting dopant includes perylene and its derivatives.

45. (previously presented) The white light-emitting OLED device of claim 32 wherein the blue dopant is represented by the following formulas:

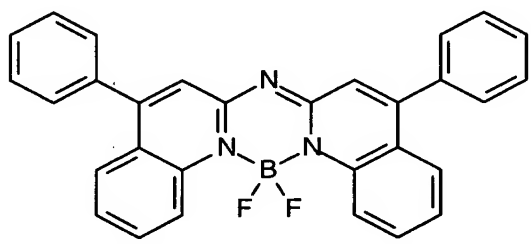
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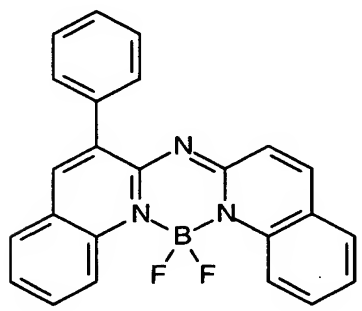
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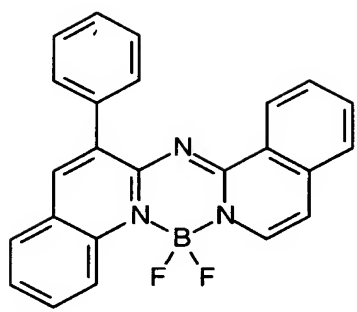
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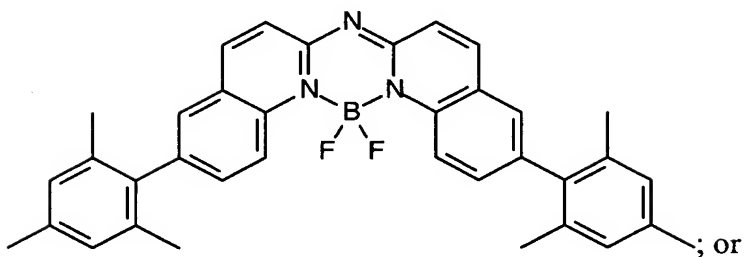


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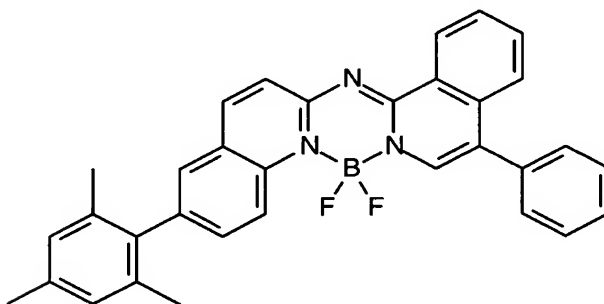


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46. (previously presented) The white light-emitting OLED device of claim 32 wherein the concentration of blue-emitting dopants is in the range of greater than 0 and less than 10% by volume of the blue host material.

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